

## LENTIVIRAL VECTORS, RELATED REAGENTS, AND METHODS OF USE THEREOF

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### Abstract

[00354] The present invention provides new lentiviral vectors, including lentiviral transfer plasmids and infectious lentiviral particles. Lentiviral vectors of the invention were designed to offer a number of desirable features including reduced size, convenient cloning sites (including multiple cloning sites and sites for particularly useful restriction enzymes),  
10 loxP sites, self-inactivating LTRs, etc. Certain of the vectors are optimized for expression of reporter genes and/or for expression of siRNAs or shRNAs within eukaryotic cells. The invention also provides three and four plasmid lentiviral expression systems. In addition, the invention provides a variety of methods for using the vectors including gene silencing in  
15 cells and transgenic animals, and methods of treating disease.

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